CHAPTER XVI.

Drawing Materials and Mathematical Instruments.

260. *Method of supply.*—Prior to the year 1930 the practice in force was that the Mathematical Instruments Depots at Bombay and Karachi in charge of the Executive Engineers at the Presidency Division, Bombay and the Karachi Buildings Division, Karachi, supplied all mathematical and scientific instruments and also drawing materials to officers of the Public Works Department only in the Province of Bombay and Sind respectively, while the Superintendent, Government Printing and Stationery, Bombay, supplied similar articles to other departments of Government such as forests, education, land records, surveys, development, etc. The dual control and dual operations that were in force with regard to the purchases and supply of such articles were found to involve considerable expense and inconvenience to indenting officers. It was therefore considered desirable by Government to entrust this work to one agency only instead of two or more organisations, thus securing the most favourable results in making the bulk purchases on more advantageous terms and conditions than before. A definite conclusion was arrived at on this question and it was decided that all mathematical and scientific instruments should, with effect from 1st April 1931, be stocked by the Mathematical Instruments Depots at Bombay and Karachi and supplied from these depots to *all* departments of Government including the Public Works Departments in the Presidency and Sind respectively (Government Resolution, General Department, No. 3119, dated 31st May 1930). It was also decided that all articles of drawing such as papers, colours, pencils, rubbers, etc., required by officers of the Public Works Department and other departments of Government in the Presidency and Sind should be stocked and supplied by the Superintendent, Government Printing and Stationery, Bombay.

261. *Transfer of stock.*—In view of this decision of Government, such of the stock of mathematical and scientific instruments that was available in the Bombay Stationery Stores was, with effect from 1st October 1930, transferred to the Executive Engineer, Presidency, Bombay, and that of the articles of drawing such as paper, colours, pencils, etc., available with that officer was made over to the stationery office (Government Resolution, General Department, No. 3119, dated 31st May 1930).

262. *Basis for the supply.*—On the transfer of such stocks to and from the stationery office, the Superintendent, Government Printing and Stationery, Bombay, with a view to regulate the purchase and supplies of these articles, proposed preparation of model indents on the basis of actual consumption for three preceeding years and orders were issued by Government to all indenting officers to follow the proposed system (Government Resolution, Public Works Department, No. 2703, dated 13th January 1931). The model indents thus prepared by officers were carefully scrutinized by the Superintendent, Government

Printing and Stationery, and on final approval were recorded in the stationery office. All articles of drawing are now supplied by the Stationery Office, Bombay, on a quantitative basis to the extent of the requirements sanctioned in the model indents.

263. *Extension of supply.*—With a view to bring the demands from several officers of one and the same class on an equal footing and to partly reduce the cost on packing and freight, it was decided by Government that all Educational institutions in the Presidency under the control of the Inspector of Drawing and Craftwork, were allowed to obtain a free supply of drawing materials from the stationery office in conformity with their model indents, on annual indents submitted through the inspecting officer at one and the same time along with the supply of stationery (Government Resolution, Educational Department, No. 5049/E, dated 24th June 1932).

Exception.—The office of the Director, Sir J. J. School of Art, Bombay, which annually consumes a large stock of special kinds of drawing articles is treated as an exception to this rule, and is excluded from the operation of these orders (Government Resolution, Educational Department, No. 5049/E, dated 24th June 1932).

264. *Articles stocked.*—Drawing papers, pencils, colours, rubbers, inks and all other necessary articles required for drawing purposes are stocked and supplied by the stationery office. A list of such articles is printed in the indent form No. 4, in Appendix XII of this book.

265. *Conditions of supply.*—All supplies of drawing articles are made by the stationery office free of charge, while articles of mathematical and scientific instruments stocked by the Mathematical Instrument Depots at Bombay and Karachi are supplied to all indenting officers on payment, at book value *plus* 10 per cent. charges for storage and supervision (Government Resolution, General Department, No. 3119, dated 28th August 1933).

266. *Tapes and scales—Classification of.*—Five feet measuring tape (tailoring pattern) is considered a drawing article and is stocked and supplied by the stationery office. Scientific measuring tapes of 100, 50, and 25 feet with leather covers required for the use of survey department and some other officers are classified under mathematical and scientific instruments and are stocked and supplied by the Executive Engineers in charge of the depots concerned at Bombay and Karachi.

267. *School patties and scientific wooden and ivory scales.*—Ordinary school patties, 12″, is considered as an article of stationery and is supplied by the stationery office, whereas scientific wooden and ivory scales with off sets, etc., required by the Public Works Department and survey departments are classified, under scientific instruments and are supplied by the Executive Engineers in charge of the depots concerned.

268. *Limitation of drawing materials to be used by the Public Works Department officers.*—The supply of drawing colours, liquid inks, pencils, etc., used by the Public Works Department officers should be reduced to the undermentioned varieties as far as possible (Government Memorandum, Public Works Department, No. 3612/27-W, dated 30th July 1930).

Colours—

1 Black Indian ink.	6 French blue.
2 Chinese white.	7 Crimson lake.
3 King's yellow.	8 Emerald green.
4 Burnt sienna.	9 Vermillion red.
5 Hooker's green.	10 Prussian blue.

Further variations if required can be gained by combining certain of these colours—

Liquid Inks—

1 Black Indian ink.	6 Prussian blue.
2 Chinese white.	7 Hooker's green.
3 King's yellow.	8 Crimson lake.
4 Burnt sienna.	9 Vermillion red.
5 French blue.	10 Emerald green.

Pencils.—H, HH, HHH, HHHH, HB, F and B.

269. *Drawing papers.*—Cartridge paper, 40″ wide, double elephant, and Royal paper, double elephant, and royal papers of Whatman's make should be used in smaller quantity only for preparing important drawings. For general use cartridge paper is to be used.